



SEQUENCE LISTING

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<120> CHEMOKINE AND RECEPTOR USES; COMPOSITIONS; METHODS

<130> DX0882XK

<140> US09/898,751

<141> 2001-07-02

<150> US09/471,549

<151> 1999-12-23

<150> US60/136,570

<151> 1999-05-27

<150> US60/113,858

<151> 1998-12-24

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<170> PatentIn version 3.1

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<212> DNA

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Asp Glu Glu Asp Ala Tyr Ser Ala Glu Pro Leu Pro Glu Leu Cys Tyr  
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aag gcc gat gtc cag gcc ttc agc cgg gcc ttc caa ccc agt gtc tcc 144  
Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser  
35 40 45

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Leu Thr Leu Ala Ala Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala  
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Thr His Leu Ala Ala Arg Arg Ala Ala Arg Ser Pro Thr Ser Ala His	
65 70 75 80	
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Leu Leu Gln Leu Ala Leu Ala Asp, Leu Leu Leu Ala Leu Thr Leu Pro	
85 90 95	
ttc gcg gca gca ggg gct ctt cag ggc tgg agt ctg gga agt gcc acc	336
Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Ser Leu Gly Ser Ala Thr	
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tgc cgc acc atc tct ggc ctc tac tcg gcc tcc ttc cac gcc ggc ttc	384
Cys Arg Thr Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe	
115 120 125	
ctc ttc ctg gcc tgt atc agc gcc gac cgc tac gtg gcc atc gcg cga	432
Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg	
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Ala Leu Pro Ala Gly Pro Arg Pro Ser Thr Pro Gly Arg Ala His Leu	
145 150 155 160	
gtc tcc gtc atc gtg tgg ctg ctg tca ctg ctc ctg gcg ctg cct gcg	528
Val Ser Val Ile Val Trp Leu Leu Ser Leu Leu Leu Ala Leu Pro Ala	
165 170 175	
ctg ctc ttc agc cag gat ggg cag cgg gaa ggc caa cga cgc tgt cgc	576
Leu Leu Phe Ser Gln Asp Gly Gln Arg Glu Gly Gln Arg Arg Cys Arg	
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Leu Ile Phe Pro Glu Gly Leu Thr Gln Thr Val Lys Gly Ala Ser Ala	
195 200 205	
gtg gcg cag gtg gcc ctg ggc ttc gcg ctg ccg ctg ggc gtc atg gta	672
Val Ala Gln Val Ala Leu Gly Phe Ala Leu Pro Leu Gly Val Met Val	
210 215 220	
gcc tgc tac gcg ctt ctg ggc cgc acg ctg ctg gcc gcc agg ggg ccc	720
Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro	
225 230 235 240	
gag cgc cgg cgt gcg ctg cgc gtc gtg gtg gct ctg gtg gcg gcc ttc	768
Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Ala Ala Phe	
245 250 255	
gtg gtg ctg cag ctg ccc tac agc ctc gcc ctg ctg ctg gat act gcc	816
Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala	
260 265 270	
gat cta ctg gct gcg cgc gag cgg agc tgc cct gcc agc aaa cgc aag	864
Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Pro Ala Ser Lys Arg Lys	
275 280 285	
gat gtc gca ctg ctg gtg acc agc ggc ttg gcc ctc gcc cgc tgt ggc	912
Asp Val Ala Leu Leu Val Thr Ser Gly Leu Ala Leu Ala Arg Cys Gly	
290 295 300	
ctc aat ccc gtt ctc tac gcc ttc ctg ggc ctg cgc ttc cgc cag gac	960

Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Gln Asp  
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 ctg cgg agg ctg cta cgg ggt ggg agc tcg ccc tca ggg cct caa ccc 1008  
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 cgc cgc ggc tgc ccc cgc cgg ccc cgc ctt tct tcc tgc tca gct ccc 1056  
 Arg Arg Gly Cys Pro Arg Arg Pro Arg Leu Ser Ser Cys Ser Ala Pro  
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 35 40 45

Leu Thr Leu Ala Ala Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala  
 50 55 60

Thr His Leu Ala Ala Arg Arg Ala Ala Arg Ser Pro Thr Ser Ala His  
 65 70 75 80

Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro  
 85 90 95

Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Ser Leu Gly Ser Ala Thr  
 100 105 110

Cys Arg Thr Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe  
 115 120 125

Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg  
 130 135 140

Ala Leu Pro Ala Gly Pro Arg Pro Ser Thr Pro Gly Arg Ala His Leu  
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Val Ser Val Ile Val Trp Leu Leu Ser Leu Leu Leu Ala Leu Pro Ala  
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180 185 190

Leu Ile Phe Pro Glu Gly Leu Thr Gln Thr Val Lys Gly Ala Ser Ala  
195 200 205

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Ala Cys Tyr Ala Leu Leu Gly Arg Thr Leu Leu Ala Ala Arg Gly Pro  
225 230 235 240

Glu Arg Arg Arg Ala Leu Arg Val Val Val Ala Leu Val Ala Ala Phe  
245 250 255

Val Val Leu Gln Leu Pro Tyr Ser Leu Ala Leu Leu Leu Asp Thr Ala  
260 265 270

Asp Leu Leu Ala Ala Arg Glu Arg Ser Cys Pro Ala Ser Lys Arg Lys  
275 280 285

Asp Val Ala Leu Leu Val Thr Ser Gly Leu Ala Leu Ala Arg Cys Gly  
290 295 300

Leu Asn Pro Val Leu Tyr Ala Phe Leu Gly Leu Arg Phe Arg Gln Asp  
305 310 315 320

Leu Arg Arg Leu Leu Arg Gly Gly Ser Ser Pro Ser Gly Pro Gln Pro  
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Tyr Asp Glu Glu Ala Tyr Ser Val Gly Pro Leu Pro Glu Leu Cys Tyr	
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Lys Ala Asp Val Gln Ala Phe Ser Arg Ala Phe Gln Pro Ser Val Ser	
35 40 45	
ctg atg gtg gct gta ctg ggt ctg gct ggc aat ggc cta gtc ttg gcc	192
Leu Met Val Ala Val Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala	
50 55 60	
acc cat ctg gca gcc aga cga act acc cga tct ccc acc tcc gtt cac	240
Thr His Leu Ala Ala Arg Arg Thr Thr Arg Ser Pro Thr Ser Val His	
65 70 75 80	
ctg ctc cag ttg gcc ctg gct gac ctt tta ttg gcc ctg act ttg cct	288
Leu Leu Gln Leu Ala Leu Ala Asp Leu Leu Leu Ala Leu Thr Leu Pro	
85 90 95	
ttt gct gca gca ggg gct ctt cag ggc tgg aat cta gga agt acc acc	336
Phe Ala Ala Ala Gly Ala Leu Gln Gly Trp Asn Leu Gly Ser Thr Thr	
100 105 110	
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Cys Arg Ala Ile Ser Gly Leu Tyr Ser Ala Ser Phe His Ala Gly Phe	
115 120 125	
ctc ttc cta gcc tgt atc agc gcc gac cgc tat gtg gcc atc gca cga	432
Leu Phe Leu Ala Cys Ile Ser Ala Asp Arg Tyr Val Ala Ile Ala Arg	
130 135 140	
gct ctc cca gcc ggg cag cgg ccc tca acg cct agc cga gcg cac ttg	480
Ala Leu Pro Ala Gly Gln Arg Pro Ser Thr Pro Ser Arg Ala His Leu	
145 150 155 160	
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Val Ser Val Phe Val Trp Leu Leu Ala Leu Phe Leu Ala Leu Pro Ala	
165 170 175	
ctc ctt ttc agc cgg gac ggg cca cgt gaa ggc caa cga cgc tgt cgg	576
Leu Leu Phe Ser Arg Asp Gly Pro Arg Glu Gly Gln Arg Arg Cys Arg	
180 185 190	
ctc att ttt ccc gaa agc ctc acg cag act gtg aaa ggg gca agc gca	624
Leu Ile Phe Pro Glu Ser Leu Thr Gln Thr Val Lys Gly Ala Ser Ala	
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Val Ala Gln Val Val Leu Gly Phe Ala Leu Pro Leu Gly Val Met Ala	
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gag cgg cgg cgt gca ctg cgc gtc gtg gtg gct ttg gtg gtg gcc ttc 768  
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 245 250 255

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gat cta ctg gca gcc cgc gag cgg agc tgc tcc tcc agc aag cgc aag 864  
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gat cta gct ttg ctg gtc acc ggc ggc ttg acc ctg gtc cgt tgc agc 912  
 Asp Leu Ala Leu Leu Val Thr Gly Gly Leu Thr Leu Val Arg Cys Ser  
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 305 310 315 320

ctg cgg agg ctg ctc cag ggc gga gga tgc agc ccg aag ccc aac cct 1008  
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cgt ggc cgc tgc ccc cgt cga ctc cgc ctt tct tcc tgc tct gct cct 1056  
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35 40 45

Leu Met Val Ala Val Leu Gly Leu Ala Gly Asn Gly Leu Val Leu Ala  
50 55 60

Thr His Leu Ala Ala Arg Arg Thr Thr Arg Ser Pro Thr Ser Val His



Leu Arg Arg Leu Leu Gln Gly Gly Gly Cys Ser Pro Lys Pro Asn Pro  
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Arg Gly Arg Cys Pro Arg Arg Leu Arg Leu Ser Ser Cys Ser Ala Pro  
 340 345 350

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gtt tca cat cat att tcc aga agg ctc ctg gaa aga gtg aat atg tgt 202  
 Val Ser His His Ile Ser Arg Arg Leu Leu Glu Arg Val Asn Met Cys  
 15 20 25

cgc atc cag aga gct gat ggg gat tgt gac ttg gct gct gtc atc ctt 250  
 Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile Leu  
 30 35 40

cat gtc aag cgc aga aga atc tgt gtc agc ccg cac aac cat act gtt 298  
 His Val Lys Arg Arg Arg Ile Cys Val Ser Pro His Asn His Thr Val  
 45 50 55



aag cag tgg atg aaa gtg caa gct gcc aag aaa aat ggt aaa gga aat 346  
Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys Asn Gly Lys Gly Asn  
60 65 70 75  
ggt tgc cac agg aag aaa cac cat ggc aag agg aac agt aac agg gca 394  
Val Cys His Arg Lys Lys His His Gly Lys Arg Asn Ser Asn Arg Ala  
80 85 90  
cat cag ggg aaa cac gaa aca tac ggc cat aaa act cct tat 436  
His Gln Gly Lys His Glu Thr Tyr Gly His Lys Thr Pro Tyr  
95 100 105  
tagagagtct acagataaat ctacagagac aattcctcaa gtggacttgg ccatgattgg 496  
ttgtcctgca tactgatgaa actactgatg tcvgctggtc tgaaaggacc taccagaagc 556  
taaattctcca agaatgccat ttccctatcc ctaatgattc aatctccctt accctgacca 616  
atcagtggcc caaattttcc agccccttgc ctcccagaac cccagcccag aactcttcag 676  
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Cys Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile  
30 35 40

Leu His Val Lys Arg Arg Arg Ile Cys Val Ser Pro His Asn His Thr  
45 50 55

Val Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys Asn Gly Lys Gly  
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Asn Val Cys His Arg Lys Lys His His Gly Lys Arg Asn Ser Asn Arg

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85

90

Ala His Gln Gly Lys His Glu Thr Tyr Gly His Lys Thr Pro Tyr  
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 Ile Tyr Trp Gly Cys Phe Tyr Phe Phe Pro Trp Leu Arg Met Trp Arg  
 20 25 30  
 agg gag cgg agt ccg atg tct cca aca agc cag aga cta agt ctg gaa 144  
 Arg Glu Arg Ser Pro Met Ser Pro Thr Ser Gln Arg Leu Ser Leu Glu  
 35 40 45  
 gcc ccc agc ctc cca ctg aga agc tgg cat ccg tgg aac aag act aag 192  
 Ala Pro Ser Leu Pro Leu Arg Ser Trp His Pro Trp Asn Lys Thr Lys  
 50 55 60  
 cag aag caa gaa gcc ttg cct ctg ccc tcc agc act agc tgc tgt act 240  
 Gln Lys Gln Glu Ala Leu Pro Leu Pro Ser Ser Thr Ser Cys Cys Thr  
 65 70 75 80  
 cag ctc tat aga cag cca ctc cca agc agg ctg ctg agg agg att gtc 288  
 Gln Leu Tyr Arg Gln Pro Leu Pro Ser Arg Leu Leu Arg Arg Ile Val  
 85 90 95  
 cac atg gaa ctg cag gag gcc gat ggg gac tgt cac ctc cag gct gtc 336  
 His Met Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu Gln Ala Val  
 100 105 110  
 gtg ctt cac ctg gct cgg cgc agt gtc tgt gtt cat ccc cag aac cgc 384  
 Val Leu His Leu Ala Arg Arg Ser Val Cys Val His Pro Gln Asn Arg  
 115 120 125  
 agc ctg gct cgg tgg tta gaa cgc caa ggg aaa agg ctc caa ggg act 432  
 Ser Leu Ala Arg Trp Leu Glu Arg Gln Gly Lys Arg Leu Gln Gly Thr  
 130 135 140  
 gta ccc agt tta aat ctg gta cta caa aag aaa atg tac tca aac ccc 480  
 Val Pro Ser Leu Asn Leu Val Leu Gln Lys Lys Met Tyr Ser Asn Pro  
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Arg Glu Arg Ser Pro Met Ser Pro Thr Ser Gln Arg Leu Ser Leu Glu  
35 40 45

Ala Pro Ser Leu Pro Leu Arg Ser Trp His Pro Trp Asn Lys Thr Lys  
50 55 60

Gln Lys Gln Glu Ala Leu Pro Leu Pro Ser Ser Thr Ser Cys Cys Thr  
65 70 75 80

Gln Leu Tyr Arg Gln Pro Leu Pro Ser Arg Leu Leu Arg Arg Ile Val  
85 90 95

His Met Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu Gln Ala Val  
100 105 110

Val Leu His Leu Ala Arg Arg Ser Val Cys Val His Pro Gln Asn Arg  
115 120 125

Ser Leu Ala Arg Trp Leu Glu Arg Gln Gly Lys Arg Leu Gln Gly Thr  
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Val Pro Ser Leu Asn Leu Val Leu Gln Lys Lys Met Tyr Ser Asn Pro  
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 Glu Val Ser His His Val Ser Gly Arg Leu Leu Glu Arg Val Ser Ser  
 15 20 25

tgc agc atc cag aga gct gac ggg gac tgc gac ctg gct gct gtc atc 192  
 Cys Ser Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile  
 30 35 40

ctt cat gtt aaa cgt aga aga atc tgc atc agc ccg cac aat cgt act 240  
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 45 50 55

ttg aag cag tgg atg aga gcc tca gag gta aag aag aat ggc aga gaa 288  
 Leu Lys Gln Trp Met Arg Ala Ser Glu Val Lys Lys Asn Gly Arg Glu  
 60 65 70

aac gtc tgt tct ggg aaa aaa caa ccc agc agg aag gac aga aaa ggg 336  
 Asn Val Cys Ser Gly Lys Lys Gln Pro Ser Arg Arg Lys Asp Arg Lys Gly  
 75 80 85 90

cac act acg aga aag cac aga aca cgt gga aca cac agg cac gaa gcc 384  
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 Ser Arg

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15 20 25

Cys Ser Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu Ala Ala Val Ile  
30 35 40

Leu His Val Lys Arg Arg Arg Ile Cys Ile Ser Pro His Asn Arg Thr  
45 50 55

Leu Lys Gln Trp Met Arg Ala Ser Glu Val Lys Lys Asn Gly Arg Glu  
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Asn Val Cys Ser Gly Lys Lys Gln Pro Ser Arg Lys Asp Arg Lys Gly  
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His Thr Thr Arg Lys His Arg Thr Arg Gly Thr His Arg His Glu Ala  
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Ser Arg

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Leu Ser Pro Asp Pro Thr Ala Ala Phe Leu Leu Pro Pro Ser Thr Ala  
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tgc tgt act cag ctc tac cga aag cca ctc tca gac aag cta ctg agg 144  
Cys Cys Thr Gln Leu Tyr Arg Lys Pro Leu Ser Asp Lys Leu Leu Arg  
10 15 20

aag gtc atc cag gtg gaa ctg cag gag gct gac ggg gac tgt cac ctc 192  
Lys Val Ile Gln Val Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu  
25 30 35 40

cag gct ttc gtg ctt cac ctg gct caa cgc agc atc tgc atc cac ccc 240  
Gln Ala Phe Val Leu His Leu Ala Gln Arg Ser Ile Cys Ile His Pro  
45 50 55

cag aac ccc agc ctg tca cag tgg ttt gag cac caa gag aga aag ctc 288  
Gln Asn Pro Ser Leu Ser Gln Trp Phe Glu His Gln Glu Arg Lys Leu  
60 65 70

cat ggg act ctg ccc aag ctg aat ttt ggg atg cta agg aaa atg ggc 336  
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10 15 20

Lys Val Ile Gln Val Glu Leu Gln Glu Ala Asp Gly Asp Cys His Leu  
25 30 35 40

Gln Ala Phe Val Leu His Leu Ala Gln Arg Ser Ile Cys Ile His Pro  
45 50 55

Gln Asn Pro Ser Leu Ser Gln Trp Phe Glu His Gln Glu Arg Lys Leu  
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His Gly Thr Leu Pro Lys Leu Asn Phe Gly Met Leu Arg Lys Met Gly  
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